



SEQUENCE LISTING

<110> Lorantis Ltd.

<120> Modulations of Notch signalling for use in Immunotherapy

<130> P011073US

<140> 10/764,415

<141> 2004-07-23

<150> GB0118153.6

<151> 2001-07-01

<150> GB0207930.9

<151> 2002-04-05

<150> GB0212283.6

<151> 2002-05-28

<150> GB0212282.8

<151> 2002-05-28

<160> 40

<170> PatentIn version 3.0

<210> 1

<211> 43

<212> PRT

<213> Artificial

<220>

<223> DSL domain consensus

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<223> N is any amino acid residue

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Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
20 25 30

Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys  
35 40

<210> 2

<211> 43

<212> PRT

<213> Artificial

<220>

<223> DSL consensus

<220>

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<223> X is any amino acid residue

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<222> (5)..(6)

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Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
20 25 30  
Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys  
35 40

<210> 3  
<211> 43  
<212> PRT  
<213> Artificial

<220>  
<223> DSL consensus  
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<221> misc\_feature  
<222> (2)..(4)  
<223> X is any amino acid residue

<220>  
<221> misc\_feature  
<222> (7)..(9)  
<223> X is any amino acid residue

<220>  
<221> misc\_feature  
<222> (11)..(13)  
<223> X is any amino acid residue

<220>  
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<222> (18)..(18)  
<223> X is either aspartic acid or asparagine

<220>  
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<222> (20)..(20)  
<223> X is any amino acid residue

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<223> X is any amino acid residue

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<222> (31)..(33)

<223> X is any amino acid residue

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<223> X is any amino acid residue

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<222> (39)..(39)

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<222> (40)..(42)

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<400> 3

Cys	Xaa	Xaa	Xaa	Tyr	Tyr	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Cys	Arg	Pro
1				5					10					15	

Arg	Xaa	Asp	Xaa	Phe	Gly	His	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Gly	Xaa	Xaa
			20					25					30		

Xaa	Cys	Xaa	Xaa	Gly	Trp	Xaa	Gly	Xaa	Xaa	Cys
		35					40			

<210> 4

<211> 175

<212> PRT

<213> Artificial

<220>



<223> EGF-like domain

<220>

<221> MISC\_FEATURE

<222> (1)..(4)

<223> X is any amino acid

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<222> (6)..(54)

<223> X is any amino acid

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<221> VARIANT

<222> (6)..(54)

<223> Any of residues 6 -52 may be present or absent

<220>

<221> MISC\_FEATURE

<222> (54)..(66)

<223> X is any amino acid

<220>

<221> VARIANT

<222> (57)..(66)

<223> Any of residues 57-66 may be present or absent

<220>

<221> MISC\_FEATURE

<222> (68)..(137)

<223> X is any amino acid

<220>

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<222> (69)..(137)  
<223> Any of residues 69 - 137 may be present or absent

<220>  
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<222> (139)..(144)  
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<222> (140)..(144)  
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<220>  
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<222> (146)..(147)  
<223> X is any amino acid

<220>  
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<222> (150)..(170)  
<223> X is any amino acid

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<222> (150)..(170)  
<223> Any of residues 150-170 may be present or absent

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<222> (172)..(173)

<223> X is any amino acid

<220>

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<222> (175)..(175)

<223> X is any amino acid

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Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					15		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			20					25					30			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		35					40					45				
Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
	50				55						60					
Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75							80
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				85					90					95		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			100					105					110			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		115					120					125				
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
	130						135				140					
Cys	Xaa	Xaa	Gly	Ala	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
145					150					155						160
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Gly	Xaa	Xaa	Cys	Xaa		
				165					170					175		

<210> 5

<211> 20

<212> DNA

<213> Artificial

<220>

<223> Primer

<400> 5

gtaacccggtt gaacccatt

<210> 6  
<211> 20  
<212> DNA  
<213> Artificial

<220>

<223> Primer

<400> 6  
ccatccaatc ggtagtagcg 20

<210> 7  
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ggtgctgata acagcggaat 20

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<400> 8  
atTTTTggaa tccttcacgc 20

<210> 9  
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<220>

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<400> 9

gatctggggg gctataaaag ggggta

26

<210> 10

<211> 26

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 10

acccccgat attttccccc attcga

26

<210> 11

<211> 50

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 11

gatcccgact cgtgggaaaa tgggcggaag ggcaccgtgg gaaaatagta

50

<210> 12

<211> 50

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 12

ggctgagcac ccttttacct gccttcccgt ggcacccttt tatcatctag

50

<210> 13

<211> 21

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 13

caccccatgg ctacctgtca g

21

<210> 14

<211> 21

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 14

ggctgcacct gctgggtctg c

21

<210> 15

<211> 36

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 15

aaaggattca ccatggcacg caagcgccgg cgcagt

36

<210> 16

<211> 33

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 16  
gcgctcgagt tacttgaacg cctccgggat gcg

33

<210> 17

<211> 800

<212> PRT

<213> Artificial

<220>

<223> Expression product

<400> 17

Met	Ala	Arg	Lys	Arg	Arg	Arg	Gln	His	Gly	Gln	Leu	Trp	Phe	Pro	Glu	
1				5					10					15		
Gly	Phe	Lys	Val	Ser	Glu	Ala	Ser	Lys	Lys	Lys	Arg	Arg	Glu	Pro	Leu	
			20					25					30			
Gly	Glu	Asp	Ser	Val	Gly	Leu	Lys	Pro	Leu	Lys	Asn	Ala	Ser	Asp	Gly	
		35					40					45				
Ala	Leu	Met	Asp	Asp	Asn	Gln	Asn	Glu	Trp	Gly	Asp	Glu	Asp	Leu	Glu	
	50					55					60					
Thr	Lys	Lys	Phe	Arg	Phe	Glu	Glu	Pro	Val	Val	Leu	Pro	Asp	Leu	Asp	
65					70					75					80	
Asp	Gln	Thr	Asp	His	Arg	Gln	Trp	Thr	Gln	Gln	His	Leu	Asp	Ala	Ala	
				85					90					95		
Asp	Leu	Arg	Met	Ser	Ala	Met	Ala	Pro	Thr	Pro	Pro	Gln	Gly	Glu	Val	
			100					105					110			
Asp	Ala	Asp	Cys	Met	Asp	Val	Asn	Val	Arg	Gly	Pro	Asp	Gly	Phe	Thr	
		115					120					125				
Pro	Leu	Met	Ile	Ala	Ser	Cys	Ser	Gly	Gly	Gly	Leu	Glu	Thr	Gly	Asn	
	130					135					140					
Ser	Glu	Glu	Glu	Glu	Asp	Ala	Pro	Ala	Val	Ile	Ser	Asp	Phe	Ile	Tyr	
145					150					155					160	
Gln	Gly	Ala	Ser	Leu	His	Asn	Gln	Thr	Asp	Arg	Thr	Gly	Glu	Thr	Ala	
				165					170					175		
Leu	His	Leu	Ala	Ala	Arg	Tyr	Ser	Arg	Ser	Asp	Ala	Ala	Lys	Arg	Leu	
			180					185					190			
Leu	Glu	Ala	Ser	Ala	Asp	Ala	Asn	Ile	Gln	Asp	Asn	Met	Gly	Arg	Thr	
		195					200					205				
Pro	Leu	His	Ala	Ala	Val	Ser	Ala	Asp	Ala	Gln	Gly	Val	Phe	Gln	Ile	
	210					215					220					
Leu	Ile	Arg	Asn	Arg	Ala	Thr	Asp	Leu	Asp	Ala	Arg	Met	His	Asp	Gly	
225					230					235					240	

Thr Thr Pro Leu Ile Leu Ala Ala Arg Leu Ala Val Glu Gly Met Leu  
 245 250 255  
 Glu Asp Leu Ile Asn Ser His Ala Asp Val Asn Ala Val Asp Asp Leu  
 260 265 270  
 Gly Lys Ser Ala Leu His Trp Ala Ala Ala Val Asn Asn Val Asp Ala  
 275 280 285  
 Ala Val Val Leu Leu Lys Asn Gly Ala Asn Lys Asp Met Gln Asn Asn  
 290 295 300  
 Arg Glu Glu Thr Pro Leu Phe Leu Ala Ala Arg Glu Gly Ser Tyr Glu  
 305 310 315 320  
 Thr Ala Lys Val Leu Leu Asp His Phe Ala Asn Arg Asp Ile Thr Asp  
 325 330 335  
 His Met Asp Arg Leu Pro Arg Asp Ile Ala Gln Glu Arg Met His His  
 340 345 350  
 Asp Ile Val Arg Leu Leu Asp Glu Tyr Asn Leu Val Arg Ser Pro Gln  
 355 360 365  
 Leu His Gly Ala Pro Leu Gly Gly Thr Pro Thr Leu Ser Pro Pro Leu  
 370 375 380  
 Cys Ser Pro Asn Gly Tyr Leu Gly Ser Leu Lys Pro Gly Val Gln Gly  
 385 390 395 400  
 Lys Lys Val Arg Lys Pro Ser Ser Lys Gly Leu Ala Cys Gly Ser Lys  
 405 410 415  
 Glu Ala Lys Asp Leu Lys Ala Arg Arg Lys Lys Ser Gln Asp Gly Lys  
 420 425 430  
 Gly Cys Leu Leu Asp Ser Ser Gly Met Leu Ser Pro Val Asp Ser Leu  
 435 440 445  
 Glu Ser Pro His Gly Tyr Leu Ser Asp Val Ala Ser Pro Pro Leu Leu  
 450 455 460  
 Pro Ser Pro Phe Gln Gln Ser Pro Ser Val Pro Leu Asn His Leu Pro  
 465 470 475 480  
 Gly Met Pro Asp Thr His Leu Gly Ile Gly His Leu Asn Val Ala Ala  
 485 490 495  
 Lys Pro Glu Met Ala Ala Leu Gly Gly Gly Gly Arg Leu Ala Phe Glu  
 500 505  
 Thr Gly Pro Pro Arg Leu Ser His Leu Pro Val Ala Ser Gly Thr Ser  
 515 520 525  
 Thr Val Leu Gly Ser Ser Ser Gly Gly Ala Leu Asn Phe Thr Val Gly  
 530 535 540  
 Gly Ser Thr Ser Leu Asn Gly Gln Cys Glu Trp Leu Ser Arg Leu Gln  
 545 550 555 560  
 Ser Gly Met Val Pro Asn Gln Tyr Asn Pro Leu Arg Gly Ser Val Ala  
 565 570 575  
 Pro Gly Pro Leu Ser Thr Gln Ala Pro Ser Leu Gln His Gly Met Val





<210> 19

<211> 63

<212> PRT

<213> Homo sapiens

<400> 19

Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser  
1 5 10 15  
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu  
35 40 45  
Arg Gly Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Tyr Cys  
50 55 60

<210> 20

<211> 63

<212> PRT

<213> Mus musculus

<400> 20

Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Arg Tyr Ser  
1 5 10 15  
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Asp  
35 40 45  
Arg Gly Glu Lys Met Cys Asp Pro Gly Trp Lys Gly Gln Tyr Cys  
50 55 60

<210> 21

<211> 63

<212> PRT

<213> Rattus rattus

<400> 21

Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Arg Tyr Ser  
1 5 10 15  
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val  
20 25 30

Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu  
35 40 45

Arg Gly Glu Lys Met Cys Asp Pro Gly Trp Lys Gly Gln Tyr Cys  
50 55 60

<210> 22

<211> 63

<212> PRT

<213> Mus musculus

<400> 22

Trp Arg Thr Asp Glu Gln Asn Asp Thr Leu Thr Arg Leu Ser Tyr Ser  
1 5 10 15

Tyr Arg Val Ile Cys Ser Asp Asn Tyr Tyr Gly Glu Ser Cys Ser Arg  
20 25 30

Leu Cys Lys Lys Arg Asp Asp His Phe Gly His Tyr Glu Cys Gln Pro  
35 40 45

Asp Gly Ser Leu Ser Cys Leu Pro Gly Trp Thr Gly Lys Tyr Cys  
50 55 60

<210> 23

<211> 63

<212> PRT

<213> Homo sapiens

<400> 23

Trp Leu Leu Asp Glu Gln Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser  
1 5 10 15

Tyr Arg Val Ile Cys Ser Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg  
20 25 30

Leu Cys Lys Lys Arg Asn Asp His Phe Gly His Tyr Val Cys Gln Pro  
35 40 45

Asp Gly Asn Leu Ser Cys Leu Pro Gly Trp Thr Gly Glu Tyr Cys  
50 55 60

<210> 24

<211> 63

<212> PRT

<213> Rattus rattus

<400> 24

Trp Gln Thr Leu Lys Gln Asn Thr Gly Ile Ala His Phe Glu Tyr Gln  
1 5 10 15  
Ile Arg Val Thr Cys Asp Asp His Tyr Tyr Gly Phe Gly Cys Asn Lys  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln  
35 40 45  
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Pro Glu Cys  
50 55 60

<210> 25

<211> 63

<212> PRT

<213> Mus musculus

<400> 25

Trp Gln Thr Leu Lys Gln Asn Thr Gly Ile Ala His Phe Glu Tyr Gln  
1 5 10 15  
Ile Arg Val Thr Cys Asp Asp His Tyr Tyr Gly Phe Gly Cys Asn Lys  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln  
35 40 45  
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Pro Asp Cys  
50 55 60

<210> 26

<211> 63

<212> PRT

<213> Homo sapiens

<400> 26

Trp Gln Thr Leu Lys Gln Asn Thr Gly Val Ala His Phe Glu Tyr Gln  
1 5 10 15  
Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln  
35 40 45  
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Arg Glu Cys  
50 55 60

<210> 27

<211> 63

<212> PRT

<213> Gallus sp.

<400> 27

Trp Gln Thr Leu Lys His Asn Thr Gly Ala Ala His Phe Glu Tyr Gln  
1 5 10 15  
Ile Arg Val Thr Cys Ala Glu His Tyr Tyr Gly Phe Gly Cys Asn Lys  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Phe Phe Thr His His Thr Cys Asp Gln  
35 40 45  
Asn Gly Asn Lys Thr Cys Leu Glu Gly Trp Thr Gly Pro Glu Cys  
50 55 60

<210> 28

<211> 63

<212> PRT

<213> Gallus sp.

<400> 28

Trp Lys Thr Leu Gln Phe Asn Gly Pro Val Ala Asn Phe Glu Val Gln  
1 5 10 15  
Ile Arg Val Lys Cys Asp Glu Asn Tyr Tyr Ser Ala Leu Cys Asn Lys  
20 25 30  
Phe Cys Gly Pro Arg Asp Asp Phe Val Gly His Tyr Thr Cys Asp Gln  
35 40 45  
Asn Gly Asn Lys Ala Cys Met Glu Gly Trp Met Gly Glu Glu Cys  
50 55 60

<210> 29

<211> 63

<212> PRT

<213> Mus musculus

<400> 29

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln  
1 5 10 15  
Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys  
20 25 30  
Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln  
35 40 45

Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
50 55 60

<210> 30

<211> 63

<212> PRT

<213> Homo sapiens

<400> 30

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln  
1 5 10 15

Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys  
20 25 30

Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln  
35 40 45

Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
50 55 60

<210> 31

<211> 63

<212> PRT

<213> Rattus rattus

<400> 31

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln  
1 5 10 15

Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys  
20 25 30

Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln  
35 40 45

Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
50 55 60

<210> 32

<211> 63

<212> PRT

<213> Homo sapiens

<400> 32

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln

1					5					10					15				
Ile	Arg	Val	Arg	Cys	Asp	Glu	Asn	Tyr	Tyr	Ser	Ala	Thr	Cys	Asn	Lys				
			20					25					30						
Phe	Cys	Arg	Pro	Arg	Asn	Asp	Phe	Phe	Gly	His	Tyr	Thr	Cys	Asp	Gln				
		35					40					45							
Tyr	Gly	Asn	Lys	Ala	Cys	Met	Asp	Gly	Trp	Met	Gly	Lys	Glu	Cys					
	50					55					60								

<210> 33

<211> 63

<212> PRT

<213> *Drosophila melanogaster*

<400> 33

Trp Lys Thr Leu Asp His Ile Gly Arg Asn Ala Arg Ile Thr Tyr Arg  
1 5 10 15  
Val Arg Val Gln Cys Ala Val Thr Tyr Tyr Asn Thr Thr Cys Thr Thr  
20 25 30  
Phe Cys Arg Pro Arg Asp Asp Gln Phe Gly His Tyr Ala Cys Gly Ser  
35 40 45  
Glu Gly Gln Lys Leu Cys Leu Asn Gly Trp Gln Gly Val Asn Cys  
50 55 60

<210> 34

<211> 723

<212> PRT

<213> Homo sapiens

<400> 34

Met 1	Gly	Ser	Arg	Cys 5	Ala	Leu	Ala	Leu	Ala 10	Val	Leu	Ser	Ala	Leu 15	Leu
Cys	Gln	Val	Trp 20	Ser	Ser	Gly	Val	Phe 25	Glu	Leu	Lys	Leu	Gln 30	Glu	Phe
Val	Asn	Lys 35	Lys	Gly	Leu	Leu	Gly 40	Asn	Arg	Asn	Cys	Cys 45	Arg	Gly	Gly
Ala	Gly 50	Pro	Pro	Pro	Cys	Ala 55	Cys	Arg	Thr	Phe	Phe 60	Arg	Val	Cys	Leu
Lys 65	His	Tyr	Gln	Ala	Ser 70	Val	Ser	Pro	Glu	Pro 75	Pro	Cys	Thr	Tyr	Gly 80
Ser	Ala	Val	Thr	Pro 85	Val	Leu	Gly	Val	Asp 90	Ser	Phe	Ser	Leu	Pro 95	Asp

Gly Gly Gly Ala Asp Ser Ala Phe Ser Asn Pro Ile Arg Phe Pro Phe  
 100 105 110  
 Gly Phe Thr Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Ala Leu His  
 115 120 125  
 Thr Asp Ser Pro Asp Asp Leu Ala Thr Glu Asn Pro Glu Arg Leu Ile  
 130 135 140  
 Ser Arg Leu Ala Thr Gln Arg His Leu Thr Val Gly Glu Glu Trp Ser  
 145 150 155 160  
 Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser Tyr Arg  
 165 170 175  
 Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val Phe Cys  
 180 185 190  
 Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu Arg Gly  
 195 200 205  
 Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Tyr Cys Thr Glu Pro  
 210 215 220  
 Ile Cys Leu Pro Gly Cys Asp Glu Gln His Gly Phe Cys Asp Lys Pro  
 225 230 235 240  
 Gly Glu Cys Lys Cys Arg Val Gly Trp Gln Gly Arg Tyr Cys Asp Glu  
 245 250 255  
 Cys Ile Arg Tyr Pro Gly Cys Leu His Gly Thr Cys Gln Gln Pro Trp  
 260 265 270  
 Gln Cys Asn Cys Gln Glu Gly Trp Gly Gly Leu Phe Cys Asn Gln Asp  
 275 280 285  
 Leu Asn Tyr Cys Thr His His Lys Pro Cys Lys Asn Gly Ala Thr Cys  
 290 295 300  
 Thr Asn Thr Gly Gln Gly Ser Tyr Thr Cys Ser Cys Arg Pro Gly Tyr  
 305 310 315 320  
 Thr Gly Ala Thr Cys Glu Leu Gly Ile Asp Glu Cys Asp Pro Ser Pro  
 325 330 335  
 Cys Lys Asn Gly Gly Ser Cys Thr Asp Leu Glu Asn Ser Tyr Ser Cys  
 340 345 350  
 Thr Cys Pro Pro Gly Phe Tyr Gly Lys Ile Cys Glu Leu Ser Ala Met  
 355 360 365  
 Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Arg Cys Ser Asp Ser  
 370 375 380  
 Pro Asp Gly Gly Tyr Ser Cys Arg Cys Pro Val Gly Tyr Ser Gly Phe  
 385 390 395 400  
 Asn Cys Glu Lys Lys Ile Asp Tyr Cys Ser Ser Ser Pro Cys Ser Asn  
 405 410 415  
 Gly Ala Lys Cys Val Asp Leu Gly Asp Ala Tyr Leu Cys Arg Cys Gln  
 420 425 430  
 Ala Gly Phe Ser Gly Arg His Cys Asp Asp Asn Val Asp Asp Cys Ala  
 435 440 445



Ser Ser Pro Cys Ala Asn Gly Gly Thr Cys Arg Asp Gly Val Asn Asp  
 450 455 460  
 Phe Ser Cys Thr Cys Pro Pro Gly Tyr Thr Gly Arg Asn Cys Ser Ala  
 465 470 475 480  
 Pro Val Ser Arg Cys Glu His Ala Pro Cys His Asn Gly Ala Thr Cys  
 485 490 495  
 His Glu Arg Gly His Gly Tyr Val Cys Glu Cys Ala Arg Gly Tyr Gly  
 500 505 510  
 Gly Pro Asn Cys Gln Phe Leu Leu Pro Glu Leu Pro Pro Gly Pro Ala  
 515 520 525  
 Val Val Asp Leu Thr Glu Lys Leu Glu Gly Gln Gly Gly Pro Phe Pro  
 530 535 540  
 Trp Val Ala Val Cys Ala Gly Val Ile Leu Val Leu Met Leu Leu Leu  
 545 550 555 560  
 Gly Cys Ala Ala Val Val Val Cys Val Arg Leu Arg Leu Gln Lys His  
 565 570 575  
 Arg Pro Pro Ala Asp Pro Cys Arg Gly Glu Thr Glu Thr Met Asn Asn  
 580 585 590  
 Leu Ala Asn Cys Gln Arg Glu Lys Asp Ile Ser Val Ser Ile Ile Gly  
 595 600 605  
 Ala Thr Gln Ile Lys Asn Thr Asn Lys Lys Ala Asp Phe His Gly Asp  
 610 615 620  
 His Ser Ala Asp Lys Asn Gly Phe Lys Ala Arg Tyr Pro Ala Val Asp  
 625 630 635 640  
 Tyr Asn Leu Val Gln Asp Leu Lys Gly Asp Asp Thr Ala Val Arg Asp  
 645 650 655  
 Ala His Ser Lys Arg Asp Thr Lys Cys Gln Pro Gln Gly Ser Ser Gly  
 660 665 670  
 Glu Glu Lys Gly Thr Pro Thr Thr Leu Arg Gly Gly Glu Ala Ser Glu  
 675 680 685  
 Arg Lys Arg Pro Asp Ser Gly Cys Ser Thr Ser Lys Asp Thr Lys Tyr  
 690 695 700  
 Gln Ser Val Tyr Val Ile Ser Glu Glu Lys Asp Glu Cys Val Ile Ala  
 705 710 715 720  
 Thr Glu Val

<210> 35

<211> 618

<212> PRT

<213> Homo sapiens

<400> 35

Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu  
1 5 10 15  
Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu  
20 25 30  
Gln Ile His Ser Phe Gly Pro Gly Pro Gly Ala Pro Arg Ser  
35 40 45  
Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
50 55 60  
Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
65 70 75 80  
Ala Ala Leu Ser Ala Arg Gly Pro Val Tyr Thr Glu Gln Pro Gly Ala  
85 90 95  
Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe  
100 105 110  
Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg  
115 120 125  
Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140  
Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160  
Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
165 170 175  
Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
180 185 190  
Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
195 200 205  
Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys  
210 215 220  
Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
225 230 235 240  
Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser  
245 250 255  
Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
260 265 270  
Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
275 280 285  
Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
290 295 300  
Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
305 310 315 320  
Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
340 345 350  
Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
355 360 365  
Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
370 375 380  
Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys  
385 390 395 400  
Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
405 410 415  
Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
420 425 430  
Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
435 440 445  
Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys  
450 455 460  
Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro  
465 470 475 480  
Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala  
485 490 495  
Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu  
500 505 510  
Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu  
515 520 525  
Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu  
530 535 540  
Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser  
545 550 555 560  
Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val  
565 570 575  
Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Val Ala Thr Pro Leu Phe  
580 585 590  
Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe  
595 600 605  
Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys  
610 615

<210> 36

<211> 685

<212> PRT

<213> Homo sapiens

<400> 36

Met Ala Ala Ala Ser Arg Ser Ala Ser Gly Trp Ala Leu Leu Leu Leu  
 1 5 10 15  
 Val Ala Leu Trp Gln Gln Arg Ala Ala Gly Ser Gly Val Phe Gln Leu  
 20 25 30  
 Gln Leu Gln Glu Phe Ile Asn Glu Arg Gly Val Leu Ala Ser Gly Arg  
 35 40 45  
 Pro Cys Glu Pro Gly Cys Arg Thr Phe Phe Arg Val Cys Leu Lys His  
 50 55 60  
 Phe Gln Ala Val Val Ser Pro Gly Pro Cys Thr Phe Gly Thr Val Ser  
 65 70 75 80  
 Thr Pro Val Leu Gly Thr Asn Ser Phe Ala Val Arg Asp Asp Ser Ser  
 85 90 95  
 Gly Gly Gly Arg Asn Pro Leu Gln Leu Pro Phe Asn Phe Thr Trp Pro  
 100 105 110  
 Gly Thr Phe Ser Leu Ile Ile Glu Ala Trp His Ala Pro Gly Asp Asp  
 115 120 125  
 Leu Arg Pro Glu Ala Leu Pro Pro Asp Ala Leu Ile Ser Lys Ile Ala  
 130 135 140  
 Ile Gln Gly Ser Leu Ala Val Gly Gln Asn Trp Leu Leu Asp Glu Gln  
 145 150 155 160  
 Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser Tyr Arg Val Ile Cys Ser  
 165 170 175  
 Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg Leu Cys Lys Lys Arg Asn  
 180 185 190  
 Asp His Phe Gly His Tyr Val Cys Gln Pro Asp Gly Asn Leu Ser Cys  
 195 200 205  
 Leu Pro Gly Trp Thr Gly Glu Tyr Cys Gln Gln Pro Ile Cys Leu Ser  
 210 215 220  
 Gly Cys His Glu Gln Asn Gly Tyr Cys Ser Lys Pro Ala Glu Cys Leu  
 225 230 235 240  
 Cys Arg Pro Gly Trp Gln Gly Arg Leu Cys Asn Glu Cys Ile Pro His  
 245 250 255  
 Asn Gly Cys Arg His Gly Thr Cys Ser Thr Pro Trp Gln Cys Thr Cys  
 260 265 270  
 Asp Glu Gly Trp Gly Gly Leu Phe Cys Asp Gln Asp Leu Asn Tyr Cys  
 275 280 285  
 Thr His His Ser Pro Cys Lys Asn Gly Ala Thr Cys Ser Asn Ser Gly  
 290 295 300  
 Gln Arg Ser Tyr Thr Cys Thr Cys Arg Pro Gly Tyr Thr Gly Val Asp  
 305 310 315 320  
 Cys Glu Leu Glu Leu Ser Glu Cys Asp Ser Asn Pro Cys Arg Asn Gly  
 325 330 335  
 Gly Ser Cys Lys Asp Gln Glu Asp Gly Tyr His Cys Leu Cys Pro Pro

340					345					350					
Gly	Tyr	Tyr	Gly	Leu	His	Cys	Glu	His	Ser	Thr	Leu	Ser	Cys	Ala	Asp
		355					360					365			
Ser	Pro	Cys	Phe	Asn	Gly	Gly	Ser	Cys	Arg	Glu	Arg	Asn	Gln	Gly	Ala
	370				375					380					
Asn	Tyr	Ala	Cys	Glu	Cys	Pro	Pro	Asn	Phe	Thr	Gly	Ser	Asn	Cys	Glu
385					390					395					400
Lys	Lys	Val	Asp	Arg	Cys	Thr	Ser	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Gln
			405						410					415	
Cys	Leu	Asn	Arg	Gly	Pro	Ser	Arg	Met	Cys	Arg	Cys	Arg	Pro	Gly	Phe
			420					425					430		
Thr	Gly	Thr	Tyr	Cys	Glu	Leu	His	Val	Ser	Asp	Cys	Ala	Arg	Asn	Pro
		435					440					445			
Cys	Ala	His	Gly	Gly	Thr	Cys	His	Asp	Leu	Glu	Asn	Gly	Leu	Met	Cys
	450					455					460				
Thr	Cys	Pro	Ala	Gly	Phe	Ser	Gly	Arg	Arg	Cys	Glu	Val	Arg	Thr	Ser
465					470					475					480
Ile	Asp	Ala	Cys	Ala	Ser	Ser	Pro	Cys	Phe	Asn	Arg	Ala	Thr	Cys	Tyr
				485					490					495	
Thr	Asp	Leu	Ser	Thr	Asp	Thr	Phe	Val	Cys	Asn	Cys	Pro	Tyr	Gly	Phe
			500					505					510		
Val	Gly	Ser	Arg	Cys	Glu	Phe	Pro	Val	Gly	Leu	Pro	Pro	Ser	Phe	Pro
		515					520					525			
Trp	Val	Ala	Val	Ser	Leu	Gly	Val	Gly	Leu	Ala	Val	Leu	Leu	Val	Leu
	530					535					540				
Leu	Gly	Met	Val	Ala	Val	Ala	Val	Arg	Gln	Leu	Arg	Leu	Arg	Arg	Pro
545					550					555					560
Asp	Asp	Gly	Ser	Arg	Glu	Ala	Met	Asn	Asn	Leu	Ser	Asp	Phe	Gln	Lys
				565					570					575	
Asp	Asn	Leu	Ile	Pro	Ala	Ala	Gln	Leu	Lys	Asn	Thr	Asn	Gln	Lys	Lys
			580					585					590		
Glu	Leu	Glu	Val	Asp	Cys	Gly	Leu	Asp	Lys	Ser	Asn	Cys	Gly	Lys	Gln
		595					600					605			
Gln	Asn	His	Thr	Leu	Asp	Tyr	Asn	Leu	Ala	Pro	Gly	Pro	Leu	Gly	Arg
	610					615					620				
Gly	Thr	Met	Pro	Gly	Lys	Phe	Pro	His	Ser	Asp	Lys	Ser	Leu	Gly	Glu
625					630					635					640
Lys	Ala	Pro	Leu	Arg	Leu	His	Ser	Glu	Lys	Pro	Glu	Cys	Arg	Ile	Ser
				645					650					655	
Ala	Ile	Cys	Ser	Pro	Arg	Asp	Ser	Met	Tyr	Gln	Ser	Val	Cys	Leu	Ile
			660					665					670		
Ser	Glu	Glu	Arg	Asn	Glu	Cys	Val	Ile	Ala	Thr	Glu	Val			
		675					680					685			

<210> 37

<211> 1218

<212> PRT

<213> Homo sapiens

<400> 37

Met	Arg	Ser	Pro	Arg	Thr	Arg	Gly	Arg	Ser	Gly	Arg	Pro	Leu	Ser	Leu
1				5					10					15	
Leu	Leu	Ala	Leu	Leu	Cys	Ala	Leu	Arg	Ala	Lys	Val	Cys	Gly	Ala	Ser
			20					25					30		
Gly	Gln	Phe	Glu	Leu	Glu	Ile	Leu	Ser	Met	Gln	Asn	Val	Asn	Gly	Glu
		35					40					45			
Leu	Gln	Asn	Gly	Asn	Cys	Cys	Gly	Gly	Ala	Arg	Asn	Pro	Gly	Asp	Arg
	50					55					60				
Lys	Cys	Thr	Arg	Asp	Glu	Cys	Asp	Thr	Tyr	Phe	Lys	Val	Cys	Leu	Lys
65					70					75					80
Glu	Tyr	Gln	Ser	Arg	Val	Thr	Ala	Gly	Gly	Pro	Cys	Ser	Phe	Gly	Ser
				85					90					95	
Gly	Ser	Thr	Pro	Val	Ile	Gly	Gly	Asn	Thr	Phe	Asn	Leu	Lys	Ala	Ser
			100					105					110		
Arg	Gly	Asn	Asp	Arg	Asn	Arg	Ile	Val	Leu	Pro	Phe	Ser	Phe	Ala	Trp
		115					120					125			
Pro	Arg	Ser	Tyr	Thr	Leu	Leu	Val	Glu	Ala	Trp	Asp	Ser	Ser	Asn	Asp
	130					135					140				
Thr	Val	Gln	Pro	Asp	Ser	Ile	Ile	Glu	Lys	Ala	Ser	His	Ser	Gly	Met
145					150					155					160
Ile	Asn	Pro	Ser	Arg	Gln	Trp	Gln	Thr	Leu	Lys	Gln	Asn	Thr	Gly	Val
				165					170					175	
Ala	His	Phe	Glu	Tyr	Gln	Ile	Arg	Val	Thr	Cys	Asp	Asp	Tyr	Tyr	Tyr
			180					185					190		
Gly	Phe	Gly	Cys	Asn	Lys	Phe	Cys	Arg	Pro	Arg	Asp	Asp	Phe	Phe	Gly
		195					200					205			
His	Tyr	Ala	Cys	Asp	Gln	Asn	Gly	Asn	Lys	Thr	Cys	Met	Glu	Gly	Trp
	210					215					220				
Met	Gly	Pro	Glu	Cys	Asn	Arg	Ala	Ile	Cys	Arg	Gln	Gly	Cys	Ser	Pro
225					230					235					240
Lys	His	Gly	Ser	Cys	Lys	Leu	Pro	Gly	Asp	Cys	Arg	Cys	Gln	Tyr	Gly
				245					250					255	
Trp	Gln	Gly	Leu	Tyr	Cys	Asp	Lys	Cys	Ile	Pro	His	Pro	Gly	Cys	Val
			260					265					270		
His	Gly	Ile	Cys	Asn	Glu	Pro	Trp	Gln	Cys	Leu	Cys	Glu	Thr	Asn	Trp
		275					280					285			

Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln  
 290 295 300  
 Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr  
 305 310 315 320  
 Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala  
 325 330 335  
 Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys  
 340 345 350  
 Glu Thr Ser Leu Gly Phe Glu Cys Glu Cys Ser Pro Gly Trp Thr Gly  
 355 360 365  
 Pro Thr Cys Ser Thr Asn Ile Asp Asp Cys Ser Pro Asn Asn Cys Ser  
 370 375 380  
 His Gly Gly Thr Cys Gln Asp Leu Val Asn Gly Phe Lys Cys Val Cys  
 385 390 395 400  
 Pro Pro Gln Trp Thr Gly Lys Thr Cys Gln Leu Asp Ala Asn Glu Cys  
 405 410 415  
 Glu Ala Lys Pro Cys Val Asn Ala Lys Ser Cys Lys Asn Leu Ile Ala  
 420 425 430  
 Ser Tyr Tyr Cys Asp Cys Leu Pro Gly Trp Met Gly Gln Asn Cys Asp  
 435 440 445  
 Ile Asn Ile Asn Asp Cys Leu Gly Gln Cys Gln Asn Asp Ala Ser Cys  
 450 455 460  
 Arg Asp Leu Val Asn Gly Tyr Arg Cys Ile Cys Pro Pro Gly Tyr Ala  
 465 470 475 480  
 Gly Asp His Cys Glu Arg Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys  
 485 490 495  
 Leu Asn Gly Gly His Cys Gln Asn Glu Ile Asn Arg Phe Gln Cys Leu  
 500 505 510  
 Cys Pro Thr Gly Phe Ser Gly Asn Leu Cys Gln Leu Asp Ile Asp Tyr  
 515 520 525  
 Cys Glu Pro Asn Pro Cys Gln Asn Gly Ala Gln Cys Tyr Asn Arg Ala  
 530 535 540  
 Ser Asp Tyr Phe Cys Lys Cys Pro Glu Asp Tyr Glu Gly Lys Asn Cys  
 545 550 555 560  
 Ser His Leu Lys Asp His Cys Arg Thr Thr Pro Cys Glu Val Ile Asp  
 565 570 575  
 Ser Cys Thr Val Ala Met Ala Ser Asn Asp Thr Pro Glu Gly Val Arg  
 580 585 590  
 Tyr Ile Ser Ser Asn Val Cys Gly Pro His Gly Lys Cys Lys Ser Gln  
 595 600 605  
 Ser Gly Gly Lys Phe Thr Cys Asp Cys Asn Lys Gly Phe Thr Gly Thr  
 610 615 620  
 Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn

625					630						635					640
Gly	Gly	Thr	Cys	Ile	Asp	Gly	Val	Asn	Ser	Tyr	Lys	Cys	Ile	Cys	Ser	
				645					650					655		
Asp	Gly	Trp	Glu	Gly	Ala	Tyr	Cys	Glu	Thr	Asn	Ile	Asn	Asp	Cys	Ser	
			660					665					670			
Gln	Asn	Pro	Cys	His	Asn	Gly	Gly	Thr	Cys	Arg	Asp	Leu	Val	Asn	Asp	
		675					680					685				
Phe	Tyr	Cys	Asp	Cys	Lys	Asn	Gly	Trp	Lys	Gly	Lys	Thr	Cys	His	Ser	
	690					695					700					
Arg	Asp	Ser	Gln	Cys	Asp	Glu	Ala	Thr	Cys	Asn	Asn	Gly	Gly	Thr	Cys	
705					710					715						720
Tyr	Asp	Glu	Gly	Asp	Ala	Phe	Lys	Cys	Met	Cys	Pro	Gly	Gly	Trp	Glu	
				725					730					735		
Gly	Thr	Thr	Cys	Asn	Ile	Ala	Arg	Asn	Ser	Ser	Cys	Leu	Pro	Asn	Pro	
			740					745					750			
Cys	His	Asn	Gly	Gly	Thr	Cys	Val	Val	Asn	Gly	Glu	Ser	Phe	Thr	Cys	
		755					760					765				
Val	Cys	Lys	Glu	Gly	Trp	Glu	Gly	Pro	Ile	Cys	Ala	Gln	Asn	Thr	Asn	
	770					775					780					
Asp	Cys	Ser	Pro	His	Pro	Cys	Tyr	Asn	Ser	Gly	Thr	Cys	Val	Asp	Gly	
785					790					795					800	
Asp	Asn	Trp	Tyr	Arg	Cys	Glu	Cys	Ala	Pro	Gly	Phe	Ala	Gly	Pro	Asp	
				805					810					815		
Cys	Arg	Ile	Asn	Ile	Asn	Glu	Cys	Gln	Ser	Ser	Pro	Cys	Ala	Phe	Gly	
			820					825					830			
Ala	Thr	Cys	Val	Asp	Glu	Ile	Asn	Gly	Tyr	Arg	Cys	Val	Cys	Pro	Pro	
		835					840					845				
Gly	His	Ser	Gly	Ala	Lys	Cys	Gln	Glu	Val	Ser	Gly	Arg	Pro	Cys	Ile	
	850					855					860					
Thr	Met	Gly	Ser	Val	Ile	Pro	Asp	Gly	Ala	Lys	Trp	Asp	Asp	Asp	Cys	
865					870					875					880	
Asn	Thr	Cys	Gln	Cys	Leu	Asn	Gly	Arg	Ile	Ala	Cys	Ser	Lys	Val	Trp	
				885					890					895		
Cys	Gly	Pro	Arg	Pro	Cys	Leu	Leu	His	Lys	Gly	His	Ser	Glu	Cys	Pro	
			900					905					910			
Ser	Gly	Gln	Ser	Cys	Ile	Pro	Ile	Leu	Asp	Asp	Gln	Cys	Phe	Val	His	
		915					920					925				
Pro	Cys	Thr	Gly	Val	Gly	Glu	Cys	Arg	Ser	Ser	Ser	Leu	Gln	Pro	Val	
	930					935					940					
Lys	Thr	Lys	Cys	Thr	Ser	Asp	Ser	Tyr	Tyr	Gln	Asp	Asn	Cys	Ala	Asn	
945					950					955					960	
Ile	Thr	Phe	Thr	Phe	Asn	Lys	Glu	Met	Met	Ser	Pro	Gly	Leu	Thr	Thr	
				965					970					975		



Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val  
                   980                                  985                                  990  
 Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala  
                   995                                  1000                                  1005  
 Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp  
           1010                                  1015                                  1020  
 Asp Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu  
           1025                                  1030                                  1035  
 Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala  
           1040                                  1045                                  1050  
 Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe  
           1055                                  1060                                  1065  
 Leu Val Pro Leu Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys  
           1070                                  1075                                  1080  
 Cys Leu Val Thr Ala Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys  
           1085                                  1090                                  1095  
 Pro Gly Ser His Thr His Ser Ala Ser Glu Asp Asn Thr Thr Asn  
           1100                                  1105                                  1110  
 Asn Val Arg Glu Gln Leu Asn Gln Ile Lys Asn Pro Ile Glu Lys  
           1115                                  1120                                  1125  
 His Gly Ala Asn Thr Val Pro Ile Lys Asp Tyr Glu Asn Lys Asn  
           1130                                  1135                                  1140  
 Ser Lys Met Ser Lys Ile Arg Thr His Asn Ser Glu Val Glu Glu  
           1145                                  1150                                  1155  
 Asp Asp Met Asp Lys His Gln Gln Lys Ala Arg Phe Ala Lys Gln  
           1160                                  1165                                  1170  
 Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys Pro Pro Asn Gly  
           1175                                  1180                                  1185  
 Thr Pro Thr Lys His Pro Asn Trp Thr Asn Lys Gln Asp Asn Arg  
           1190                                  1195                                  1200  
 Asp Leu Glu Ser Ala Gln Ser Leu Asn Arg Met Glu Tyr Ile Val  
           1205                                  1210                                  1215

<210> 38

<211> 1238

<212> PRT

<213> Homo sapiens

<400> 38

Met Arg Ala Gln Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu  
 1                  5                                  10                                  15  
 Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu  
           20                                  25                                  30

Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala  
 35 40 45  
 Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His  
 50 55 60  
 Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala  
 65 70 75 80  
 Lys Val Thr Pro Thr Gly Pro Cys Ser Tyr Gly His Gly Ala Thr Pro  
 85 90 95  
 Val Leu Gly Gly Asn Ser Phe Tyr Leu Pro Pro Ala Gly Ala Ala Gly  
 100 105 110  
 Asp Arg Ala Arg Ala Arg Ala Arg Ala Gly Gly Asp Gln Asp Pro Gly  
 115 120 125  
 Leu Val Val Ile Pro Phe Gln Phe Ala Trp Pro Arg Ser Phe Thr Leu  
 130 135 140  
 Ile Val Glu Ala Trp Asp Trp Asp Asn Asp Thr Thr Pro Asn Glu Glu  
 145 150 155 160  
 Leu Leu Ile Glu Arg Val Ser His Ala Gly Met Ile Asn Pro Glu Asp  
 165 170 175  
 Arg Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu  
 180 185 190  
 Gln Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn  
 195 200 205  
 Lys Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp  
 210 215 220  
 Gln Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
 225 230 235 240  
 Lys Glu Ala Val Cys Lys Gln Gly Cys Asn Leu Leu His Gly Gly Cys  
 245 250 255  
 Thr Val Pro Gly Glu Cys Arg Cys Ser Tyr Gly Trp Gln Gly Arg Phe  
 260 265 270  
 Cys Asp Glu Cys Val Pro Tyr Pro Gly Cys Val His Gly Ser Cys Val  
 275 280 285  
 Glu Pro Trp Gln Cys Asn Cys Glu Thr Asn Trp Gly Gly Leu Leu Cys  
 290 295 300  
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 Gly Thr Cys Ile Asn Ala Glu Pro Asp Gln Tyr Arg Cys Thr Cys Pro  
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 Asp Gly Tyr Ser Gly Arg Asn Cys Glu Lys Ala Glu His Ala Cys Thr  
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 Ser Asn Pro Cys Ala Asn Gly Gly Ser Cys His Glu Val Pro Ser Gly  
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 Phe Glu Cys His Cys Pro Ser Gly Trp Ser Gly Pro Thr Cys Ala Leu

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Gly	Ala	Thr	Cys 420	Gln	Leu	Asp	Ala	Asn 425	Glu	Cys	Glu	Gly	Lys 430	Pro	Cys
Leu	Asn	Ala 435	Phe	Ser	Cys	Lys	Asn 440	Leu	Ile	Gly	Gly	Tyr 445	Tyr	Cys	Asp
Cys	Ile 450	Pro	Gly	Trp	Lys	Gly 455	Ile	Asn	Cys	His	Ile 460	Asn	Val	Asn	Asp
Cys 465	Arg	Gly	Gln	Cys	Gln 470	His	Gly	Gly	Thr	Cys 475	Lys	Asp	Leu	Val	Asn 480
Gly	Tyr	Gln	Cys	Val 485	Cys	Pro	Arg	Gly	Phe 490	Gly	Gly	Arg	His	Cys 495	Glu
Leu	Glu	Arg	Asp 500	Lys	Cys	Ala	Ser	Ser 505	Pro	Cys	His	Ser	Gly 510	Gly	Leu
Cys	Glu	Asp 515	Leu	Ala	Asp	Gly	Phe 520	His	Cys	His	Cys	Pro 525	Gln	Gly	Phe
Ser	Gly 530	Pro	Leu	Cys	Glu	Val 535	Asp	Val	Asp	Leu	Cys 540	Glu	Pro	Ser	Pro
Cys 545	Arg	Asn	Gly	Ala	Arg 550	Cys	Tyr	Asn	Leu	Glu 555	Gly	Asp	Tyr	Tyr	Cys 560
Ala	Cys	Pro	Asp	Asp 565	Phe	Gly	Gly	Lys	Asn 570	Cys	Ser	Val	Pro	Arg 575	Glu
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Ala	Gly 595	Pro	Gly	Met	Pro	Gly	Thr 600	Ala	Ala	Ser	Gly	Val 605	Cys	Gly	Pro
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Thr	Asn 675	Pro	Asn	Asp	Cys	Leu	Pro 680	Asp	Pro	Cys	His	Ser 685	Arg	Gly	Arg
Cys	Tyr 690	Asp	Leu	Val	Asn	Asp 695	Phe	Tyr	Cys	Ala	Cys 700	Asp	Asp	Gly	Trp
Lys 705	Gly	Lys	Thr	Cys	His 710	Ser	Arg	Glu	Phe	Gln 715	Cys	Asp	Ala	Tyr	Thr 720

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 Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly  
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 Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg  
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 Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu  
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 Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu  
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 Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu  
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 Ser Gly Ile Arg Ser Leu Pro Ala Thr Arg Ala Val Ala Arg Asp Arg  
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Lys Val Glu Thr Val Val Thr Gly Gly Ser Ser Thr Gly Leu Leu  
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 Val Val Leu Cys Val Trp Trp Thr Arg Lys Arg Arg Lys Glu Arg  
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 Val Arg Glu Asp Glu Glu Asp Glu Asp Leu Gly Arg Gly Glu Glu  
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<222> (891)..(891)

<223> X is any amino acid

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Asn Gly Gly Lys Cys Glu Ala Ala Asn Gly Thr Glu Ala Cys Val Cys  
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 Gly Gly Ala Phe Val Gly Pro Arg Cys Gln Asp Pro Asn Pro Cys Leu  
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 Ser Thr Pro Cys Lys Asn Ala Gly Thr Cys His Val Val Asp Arg Arg  
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 Gly Val Ala Asp Tyr Ala Cys Ser Cys Ala Leu Gly Phe Ser Gly Pro  
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 Leu Cys Leu Thr Pro Leu Asp Asn Ala Cys Leu Thr Asn Pro Cys Arg  
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 Asn Gly Gly Thr Cys Asp Leu Leu Thr Leu Thr Glu Tyr Lys Cys Arg  
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 Cys Pro Pro Gly Trp Ser Gly Lys Ser Cys Gln Gln Ala Asp Pro Cys  
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 Ser Tyr Ile Cys His Cys Pro Pro Ser Phe His Gly Pro Thr Cys Arg  
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 Gln Asp Val Asn Glu Cys Gly Gln Lys Pro Arg Leu Cys Arg His Gly  
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 Gly Thr Cys His Asn Glu Val Gly Ser Tyr Arg Cys Val Cys Arg Ala  
 195 200 205  
 Thr His Thr Gly Pro Asn Cys Glu Arg Pro Tyr Val Pro Cys Ser Pro  
 210 215 220  
 Ser Pro Cys Gln Asn Gly Gly Thr Cys Arg Pro Thr Gly Asp Val Thr  
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 245 250 255  
 Asn Ile Asp Asp Cys Pro Gly Asn Asn Cys Lys Asn Gly Gly Ala Cys  
 260 265 270  
 Val Asp Gly Val Asn Thr Tyr Asn Cys Pro Cys Pro Pro Glu Trp Thr  
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 Gly Gln Tyr Cys Thr Glu Asp Val Asp Glu Cys Gln Leu Met Pro Asn  
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 Ala Cys Gln Asn Gly Gly Thr Cys His Asn Thr His Gly Gly Tyr Asn  
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 Cys Val Cys Val Asn Gly Trp Thr Gly Glu Asp Cys Ser Glu Asn Ile  
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 Arg Val Ala Ser Phe Tyr Cys Glu Cys Pro His Gly Arg Thr Gly Leu  
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 Leu Cys His Leu Asn Asp Ala Cys Ile Ser Asn Pro Cys Asn Glu Gly  
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Ser Asn Cys Asp Thr Asn Pro Val Asn Gly Lys Ala Ile Cys Thr Cys  
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 Pro Ser Gly Tyr Thr Gly Pro Ala Cys Ser Gln Asp Val Asp Glu Cys  
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 Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro Arg  
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 Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn Asp  
 450 455 460  
 Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met Pro  
 465 470 475 480  
 Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr Asp Glu Cys Ala Ser  
 485 490 495  
 Ser Pro Cys Leu His Asn Gly Arg Cys Leu Asp Lys Ile Asn Glu Phe  
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 Gln Cys Glu Cys Pro Thr Gly Phe Thr Gly His Leu Cys Gln Tyr Asp  
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 Val Asp Glu Cys Ala Ser Thr Pro Cys Lys Asn Gly Ala Lys Cys Leu  
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 Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg  
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 Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser  
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 Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala  
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 Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile  
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 Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu  
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 Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly  
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 Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His  
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 Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Glu Val Asn Glu Cys  
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Tyr	Lys	Cys	Asp	Cys	Asp	Pro	Gly	Trp	Ser	Gly	Thr	Asn	Cys	Asp	Ile				
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Asn	Asn	Asn	Glu	Cys	Glu	Ser	Asn	Pro	Cys	Val	Asn	Gly	Gly	Thr	Cys				
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Lys	Asp	Met	Thr	Ser	Gly	Ile	Val	Cys	Thr	Cys	Arg	Glu	Gly	Phe	Ser				
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Gly	Pro	Asn	Cys	Gln	Thr	Asn	Ile	Asn	Glu	Cys	Ala	Ser	Asn	Pro	Cys				
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Cys	Ala	Pro	Ser	Pro	Cys	Arg	Asn	Gly	Gly	Glu	Cys	Arg	Gln	Ser	Glu				
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Gln	Thr	Cys	Glu	Val	Asp	Ile	Asn	Glu	Cys	Val	Leu	Ser	Pro	Cys	Arg				
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His	Gly	Ala	Ser	Cys	Gln	Asn	Thr	His	Gly	Xaa	Tyr	Arg	Cys	His	Cys				
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Gln	Ala	Gly	Tyr	Ser	Gly	Arg	Asn	Cys	Glu	Thr	Asp	Ile	Asp	Asp	Cys				
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Arg	Pro	Asn	Pro	Cys	His	Asn	Gly	Gly	Ser	Cys	Thr	Asp	Gly	Ile	Asn				
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Thr	Ala	Phe	Cys	Asp	Cys	Leu	Pro	Gly	Phe	Arg	Gly	Thr	Phe	Cys	Glu				
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Glu	Asp	Ile	Asn	Glu	Cys	Ala	Ser	Asp	Pro	Cys	Arg	Asn	Gly	Ala	Asn				
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	1040					1045					1050								
Gly	Pro	Asn	Cys	Gln	Asn	Leu	Val	His	Trp	Cys	Asp	Ser	Ser	Pro					
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Ala	Arg	Leu	Cys	Gln	His	Gly	Gly	Leu	Cys	Val	Asp	Ala	Gly	Asn
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Thr	His	His	Cys	Arg	Cys	Gln	Ala	Gly	Tyr	Thr	Gly	Ser	Tyr	Cys
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Glu	Asp	Leu	Val	Asp	Glu	Cys	Ser	Pro	Ser	Pro	Cys	Gln	Asn	Gly
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Ala	Thr	Cys	Thr	Asp	Tyr	Leu	Gly	Gly	Tyr	Ser	Cys	Lys	Cys	Val
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Ala	Gly	Tyr	His	Gly	Val	Asn	Cys	Ser	Glu	Glu	Ile	Asp	Glu	Cys
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Cys	Glu	Ile	Asn	Val	Asp	Asp	Cys	Asn	Pro	Pro	Val	Asp	Pro	Val
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Arg	Cys	Glu	Gly	Asp	Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Asp
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Cys	Glu	Cys	Arg	Ala	Gly	His	Thr	Gly	Arg	Arg	Cys	Glu	Ser	Val
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Cys	Gln	Phe	Pro	Ala	Ser	Ser	Pro	Cys	Leu	Gly	Gly	Asn	Pro	Cys
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Tyr	Asn 1400	Gln	Gly	Thr	Cys	Glu 1405	Pro	Thr	Ser	Glu	Ser 1410	Pro	Phe	Tyr
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Leu	Asp 1430	Tyr	Ser	Phe	Gly	Gly 1435	Gly	Ala	Gly	Arg	Asp 1440	Ile	Pro	Pro
Pro	Leu 1445	Ile	Glu	Glu	Ala	Cys 1450	Glu	Leu	Pro	Glu	Cys 1455	Gln	Glu	Asp
Ala	Gly 1460	Asn	Lys	Val	Cys	Ser 1465	Leu	Gln	Cys	Asn	Asn 1470	His	Ala	Cys
Gly	Trp 1475	Asp	Gly	Gly	Asp	Cys 1480	Ser	Leu	Asn	Phe	Asn 1485	Asp	Pro	Trp
Lys	Asn 1490	Cys	Thr	Gln	Ser	Leu 1495	Gln	Cys	Trp	Lys	Tyr 1500	Phe	Ser	Asp
Gly	His 1505	Cys	Asp	Ser	Gln	Cys 1510	Asn	Ser	Ala	Gly	Cys 1515	Leu	Phe	Asp
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Asp	Gln 1535	Tyr	Cys	Lys	Asp	His 1540	Phe	Ser	Asp	Gly	His 1545	Cys	Asp	Gln
Gly	Cys 1550	Asn	Ser	Ala	Glu	Cys 1555	Glu	Trp	Asp	Gly	Leu 1560	Asp	Cys	Ala
Glu	His 1565	Val	Pro	Glu	Arg	Leu 1570	Ala	Ala	Gly	Thr	Leu 1575	Val	Val	Val
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Leu	Arg 1595	Glu	Leu	Ser	Arg	Val 1600	Leu	His	Thr	Asn	Val 1605	Val	Phe	Lys
Arg	Asp 1610	Ala	His	Gly	Gln	Gln 1615	Met	Ile	Phe	Pro	Tyr 1620	Tyr	Gly	Arg
Glu	Glu 1625	Glu	Leu	Arg	Lys	His 1630	Pro	Ile	Lys	Arg	Ala 1635	Ala	Glu	Gly
Trp	Ala 1640	Ala	Pro	Asp	Ala	Leu 1645	Leu	Gly	Gln	Val	Lys 1650	Ala	Ser	Leu
Leu	Pro 1655	Gly	Gly	Ser	Glu	Gly 1660	Gly	Arg	Arg	Arg	Arg 1665	Glu	Leu	Asp
Pro	Met 1670	Asp	Val	Arg	Gly	Ser 1675	Ile	Val	Tyr	Leu	Glu 1680	Ile	Asp	Asn
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Pro	Leu	Ile	Leu	Ala	Ala	Arg	Leu	Ala	Val	Glu	Gly	Met	Leu	Glu
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Ser	Lys	Gly	Leu	Ala	Cys	Gly	Ser	Lys	Glu	Ala	Lys	Asp	Leu	Lys
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Ala	Arg	Arg	Lys	Lys	Ser	Gln	Asp	Gly	Lys	Gly	Cys	Leu	Leu	Asp
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	2195					2200					2205			
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	2210					2215					2220			
Phe	Gln	Gln	Ser	Pro	Ser	Val	Pro	Leu	Asn	His	Leu	Pro	Gly	Met
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Pro	Asp	Thr	His	Leu	Gly	Ile	Gly	His	Leu	Asn	Val	Ala	Ala	Lys
	2240					2245					2250			
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Thr	Gly	Pro	Pro	Arg	Leu	Ser	His	Leu	Pro	Val	Ala	Ser	Gly	Thr
	2270					2275					2280			
Ser	Thr	Val	Leu	Gly	Ser	Ser	Ser	Gly	Gly	Ala	Leu	Asn	Phe	Thr
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Val	Gly	Gly	Ser	Thr	Ser	Leu	Asn	Gly	Gln	Cys	Glu	Trp	Leu	Ser
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	2315					2320					2325			
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	2330					2335					2340			
Gln	His	Gly	Met	Val	Gly	Pro	Leu	His	Ser	Ser	Leu	Ala	Ala	Ser
	2345					2350					2355			
Ala	Leu	Ser	Gln	Met	Met	Ser	Tyr	Gln	Gly	Leu	Pro	Ser	Thr	Arg
	2360					2365					2370			

Leu Ala Thr Gln Pro His Leu Val Gln Thr Gln Gln Val Gln Pro  
 2375 2380 2385  
 Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro Ala Asn Ile  
 2390 2395 2400  
 Gln Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro Gln Pro  
 2405 2410 2415  
 His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Arg Ser  
 2420 2425 2430  
 Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val Gln Pro Leu Gly  
 2435 2440 2445  
 Pro Ser Ser Leu Ala Val His Thr Ile Leu Pro Gln Glu Ser Pro  
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 Ala Leu Pro Thr Ser Leu Pro Ser Ser Leu Val Pro Pro Val Thr  
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 Ala Ala Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser  
 2480 2485 2490  
 Pro Val Asp Asn Thr Pro Ser His Gln Leu Gln Val Pro Glu His  
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 Pro Phe Leu Thr Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser  
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 Ser Ser Pro His Ser Asn Val Ser Asp Trp Ser Glu Gly Val Ser  
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 Ser Pro Pro Thr Ser Met Gln Ser Gln Ile Ala Arg Ile Pro Glu  
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 Ala Phe Lys  
 2555

<210> 40

<211> 2471

<212> PRT

<213> Homo sapiens

<400> 40

Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp  
 1 5 10 15  
 Leu Cys Cys Ala Ala Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr  
 20 25 30  
 Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr  
 35 40 45  
 Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His  
 50 55 60  
 Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val

65	70	75	80
Ala Gln Ala Met	Leu Gly Lys Ala Thr	Cys Arg Cys Ala Ser	Gly Phe
	85	90	95
Thr Gly Glu Asp	Cys Gln Tyr Ser	Thr Ser His Pro Cys	Phe Val Ser
	100	105	110
Arg Pro Cys	Leu Asn Gly Gly	Thr Cys His Met Leu	Ser Arg Asp Thr
	115	120	125
Tyr Glu Cys	Thr Cys Gln Val	Gly Phe Thr Gly	Lys Glu Cys Gln Trp
	130	135	140
Thr Asp Ala Cys	Leu Ser His Pro Cys	Ala Asn Gly	Ser Thr Cys Thr
	145	150	155
Thr Val Ala Asn	Gln Phe Ser Cys Lys	Cys Leu Thr Gly	Phe Thr Gly
	165	170	175
Gln Lys Cys	Glu Thr Asp Val	Asn Glu Cys	Asp Ile Pro Gly His Cys
	180	185	190
Gln His Gly	Gly Thr Cys Leu	Asn Leu Pro Gly	Ser Tyr Gln Cys Gln
	195	200	205
Cys Pro Gln	Gly Phe Thr Gly	Gln Tyr Cys Asp	Ser Leu Tyr Val Pro
	210	215	220
Cys Ala Pro	Ser Pro Cys	Val Asn Gly Gly	Thr Cys Arg Gln Thr Gly
	225	230	235
Asp Phe Thr	Phe Glu Cys	Asn Cys Leu	Pro Gly Phe Glu Gly Ser Thr
	245	250	255
Cys Glu Arg	Asn Ile Asp Asp	Cys Pro Asn His	Arg Cys Gln Asn Gly
	260	265	270
Gly Val Cys	Val Asp Gly Val	Asn Thr Tyr Asn	Cys Arg Cys Pro Pro
	275	280	285
Gln Trp Thr	Gly Gln Phe Cys	Thr Glu Asp Val	Asp Glu Cys Leu Leu
	290	295	300
Gln Pro Asn	Ala Cys Gln	Asn Gly Gly Thr	Cys Ala Asn Arg Asn Gly
	305	310	315
Gly Tyr Gly	Cys Val Cys	Val Asn Gly	Trp Ser Gly Asp Asp Cys Ser
	325	330	335
Glu Asn Ile	Asp Asp Cys	Ala Phe Ala	Ser Cys Thr Pro Gly Ser Thr
	340	345	350
Cys Ile Asp	Arg Val Ala	Ser Phe Ser	Cys Met Cys Pro Glu Gly Lys
	355	360	365
Ala Gly Leu	Leu Cys His	Leu Asp Asp	Ala Cys Ile Ser Asn Pro Cys
	370	375	380
His Lys Gly	Ala Leu Cys	Asp Thr Asn	Pro Leu Asn Gly Gln Tyr Ile
	385	390	395
Cys Thr Cys	Pro Gln Gly	Tyr Lys Gly	Ala Asp Cys Thr Glu Asp Val
	405	410	415

Asp Glu Cys Ala Met Ala Asn Ser Asn Pro Cys Glu His Ala Gly Lys  
 420 425 430  
 Cys Val Asn Thr Asp Gly Ala Phe His Cys Glu Cys Leu Lys Gly Tyr  
 435 440 445  
 Ala Gly Pro Arg Cys Glu Met Asp Ile Asn Glu Cys His Ser Asp Pro  
 450 455 460  
 Cys Gln Asn Asp Ala Thr Cys Leu Asp Lys Ile Gly Gly Phe Thr Cys  
 465 470 475 480  
 Leu Cys Met Pro Gly Phe Lys Gly Val His Cys Glu Leu Glu Ile Asn  
 485 490 495  
 Glu Cys Gln Ser Asn Pro Cys Val Asn Asn Gly Gln Cys Val Asp Lys  
 500 505 510  
 Val Asn Arg Phe Gln Cys Leu Cys Pro Pro Gly Phe Thr Gly Pro Val  
 515 520 525  
 Cys Gln Ile Asp Ile Asp Asp Cys Ser Ser Thr Pro Cys Leu Asn Gly  
 530 535 540  
 Ala Lys Cys Ile Asp His Pro Asn Gly Tyr Glu Cys Gln Cys Ala Thr  
 545 550 555 560  
 Gly Phe Thr Gly Val Leu Cys Glu Glu Asn Ile Asp Asn Cys Asp Pro  
 565 570 575  
 Asp Pro Cys His His Gly Gln Cys Gln Asp Gly Ile Asp Ser Tyr Thr  
 580 585 590  
 Cys Ile Cys Asn Pro Gly Tyr Met Gly Ala Ile Cys Ser Asp Gln Ile  
 595 600 605  
 Asp Glu Cys Tyr Ser Ser Pro Cys Leu Asn Asp Gly Arg Cys Ile Asp  
 610 615 620  
 Leu Val Asn Gly Tyr Gln Cys Asn Cys Gln Pro Gly Thr Ser Gly Val  
 625 630 635 640  
 Asn Cys Glu Ile Asn Phe Asp Asp Cys Ala Ser Asn Pro Cys Ile His  
 645 650 655  
 Gly Ile Cys Met Asp Gly Ile Asn Arg Tyr Ser Cys Val Cys Ser Pro  
 660 665 670  
 Gly Phe Thr Gly Gln Arg Cys Asn Ile Asp Ile Asp Glu Cys Ala Ser  
 675 680 685  
 Asn Pro Cys Arg Lys Gly Ala Thr Cys Ile Asn Gly Val Asn Gly Phe  
 690 695 700  
 Arg Cys Ile Cys Pro Glu Gly Pro His His Pro Ser Cys Tyr Ser Gln  
 705 710 715 720  
 Val Asn Glu Cys Leu Ser Asn Pro Cys Ile His Gly Asn Cys Thr Gly  
 725 730 735  
 Gly Leu Ser Gly Tyr Lys Cys Leu Cys Asp Ala Gly Trp Val Gly Ile  
 740 745 750  
 Asn Cys Glu Val Asp Lys Asn Glu Cys Leu Ser Asn Pro Cys Gln Asn  
 755 760 765

Gly 770 Gly Thr Cys Asp Asn 775 Leu Val Asn Gly Tyr Arg 780 Cys Thr Cys Lys  
 Lys 785 Gly Phe Lys Gly Tyr 790 Asn Cys Gln Val Asn 795 Ile Asp Glu Cys Ala 800  
 Ser Asn Pro Cys 805 Leu Asn Gln Gly Thr Cys 810 Phe Asp Asp Ile Ser 815 Gly  
 Tyr Thr Cys 820 His Cys Val Leu Pro Tyr 825 Thr Gly Lys Asn Cys 830 Gln Thr  
 Val Leu 835 Ala Pro Cys Ser Pro 840 Asn Pro Cys Glu Asn 845 Ala Ala Val Cys  
 Lys 850 Glu Ser Pro Asn Phe 855 Glu Ser Tyr Thr Cys 860 Leu Cys Ala Pro Gly  
 Trp 865 Gln Gly Gln Arg Cys 870 Thr Ile Asp Ile Asp 875 Glu Cys Ile Ser Lys 880  
 Pro Cys Met Asn 885 His Gly Leu Cys His 890 Asn Thr Gln Gly Ser Tyr Met 895  
 Cys Glu Cys 900 Pro Gly Phe Ser 905 Gly Met Asp Cys Glu 910 Glu Asp Ile  
 Asp Asp Cys 915 Leu Ala Asn Pro Cys 920 Gln Asn Gly Gly Ser 925 Cys Met Asp  
 Gly 930 Val Asn Thr Phe Ser 935 Cys Leu Cys Leu Pro Gly 940 Phe Thr Gly Asp  
 Lys 945 Cys Gln Thr Asp Met 950 Asn Glu Cys Leu Ser 955 Glu Pro Cys Lys Asn 960  
 Gly Gly Thr Cys 965 Ser Asp Tyr Val Asn 970 Ser Tyr Thr Cys Lys Cys 975 Gln  
 Ala Gly Phe Asp 980 Gly Val His Cys 985 Glu Asn Asn Ile Asn 990 Glu Cys Thr  
 Glu Ser 995 Ser Cys Phe Asn Gly 1000 Gly Thr Cys Val Asp Gly 1005 Ile Asn Ser  
 Phe 1010 Ser Cys Leu Cys Pro Val 1015 Gly Phe Thr Gly Ser 1020 Phe Cys Leu  
 His 1025 Glu Ile Asn Glu Cys Ser 1030 Ser His Pro Cys 1035 Leu Asn Glu Gly  
 Thr 1040 Cys Val Asp Gly Leu Gly 1045 Thr Tyr Arg Cys Ser 1050 Cys Pro Leu  
 Gly 1055 Tyr Thr Gly Lys Asn Cys 1060 Gln Thr Leu Val Asn 1065 Leu Cys Ser  
 Arg 1070 Ser Pro Cys Lys Asn Lys 1075 Gly Thr Cys Val Gln 1080 Lys Lys Ala  
 Glu 1085 Ser Gln Cys Leu Cys Pro 1090 Ser Gly Trp Ala Gly 1095 Ala Tyr Cys  
 Asp Val Pro Asn Val Ser Cys Asp Ile Ala Ala Ser Arg Arg Gly



1100	1105	1110
Val Leu 1115	Val Glu His Leu Cys 1120	Val Cys Ile Asn 1125
Ala Gly 1130	Asn Thr His Tyr Cys 1135	Gly Tyr Thr Gly 1140
Ser Tyr 1145	Cys Glu Glu Gln Leu 1150	Ser Asn Pro Cys 1155
Gln His 1160	Gly Ala Thr Cys Ser 1165	Gly Tyr Arg Cys 1170
Glu Cys 1175	Val Pro Gly Tyr Gln 1180	Glu Tyr Glu Val 1185
Asp Glu 1190	Cys Gln Asn Gln Pro 1195	Gly Thr Cys Ile 1200
Asp Leu 1205	Val Asn His Phe Lys 1210	Pro Gly Thr Arg 1215
Gly Leu 1220	Leu Cys Glu Glu Asn 1225	Ala Arg Gly Pro 1230
His Cys 1235	Leu Asn Gly Gly Gln 1240	Ile Gly Gly Tyr 1245
Ser Cys 1250	Arg Cys Leu Pro Gly 1255	Arg Cys Glu Gly 1260
Asp Ile 1265	Asn Glu Cys Leu Ser 1270	Ser Glu Gly Ser 1275
Leu Asp 1280	Cys Ile Gln Leu Thr 1285	Cys Val Cys Arg 1290
Ser Ala 1295	Phe Thr Gly Arg His 1300	Val Asp Val Cys 1305
Pro Gln 1310	Met Pro Cys Leu Asn 1315	Val Ala Ser 1320
Asn Met 1325	Pro Asp Gly Phe Ile 1330	Pro Gly Phe Ser 1335
Gly Ala 1340	Arg Cys Gln Ser Ser 1345	Lys Cys Arg Lys 1350
Gly Glu 1355	Gln Cys Val His Thr 1360	Arg Cys Phe Cys 1365
Pro Ser 1370	Pro Arg Asp Cys Glu 1375	Ser Ser Pro Cys 1380
Gln His 1385	Gly Gly Ser Cys His 1390	Pro Pro Tyr Tyr 1395
Ser Cys 1400	Gln Cys Ala Pro Pro 1405	Arg Cys Glu Leu 1410
Tyr Thr 1415	Ala Pro Pro Ser Thr 1420	Cys Leu Ser Gln 1425

Tyr	Cys	Ala	Asp	Lys	Ala	Arg	Asp	Gly	Val	Cys	Asp	Glu	Ala	Cys
	1430					1435					1440			
Asn	Ser	His	Ala	Cys	Gln	Trp	Asp	Gly	Gly	Asp	Cys	Ser	Leu	Thr
	1445					1450					1455			
Met	Glu	Asn	Pro	Trp	Ala	Asn	Cys	Ser	Ser	Pro	Leu	Pro	Cys	Trp
	1460					1465					1470			
Asp	Tyr	Ile	Asn	Asn	Gln	Cys	Asp	Glu	Leu	Cys	Asn	Thr	Val	Glu
	1475					1480					1485			
Cys	Leu	Phe	Asp	Asn	Phe	Glu	Cys	Gln	Gly	Asn	Ser	Lys	Thr	Cys
	1490					1495					1500			
Lys	Tyr	Asp	Lys	Tyr	Cys	Ala	Asp	His	Phe	Lys	Asp	Asn	His	Cys
	1505					1510					1515			
Asn	Gln	Gly	Cys	Asn	Ser	Glu	Glu	Cys	Gly	Trp	Asp	Gly	Leu	Asp
	1520					1525					1530			
Cys	Ala	Ala	Asp	Gln	Pro	Glu	Asn	Leu	Ala	Glu	Gly	Thr	Leu	Val
	1535					1540					1545			
Ile	Val	Val	Leu	Met	Pro	Pro	Glu	Gln	Leu	Leu	Gln	Asp	Ala	Arg
	1550					1555					1560			
Ser	Phe	Leu	Arg	Ala	Leu	Gly	Thr	Leu	Leu	His	Thr	Asn	Leu	Arg
	1565					1570					1575			
Ile	Lys	Arg	Asp	Ser	Gln	Gly	Glu	Leu	Met	Val	Tyr	Pro	Tyr	Tyr
	1580					1585					1590			
Gly	Glu	Lys	Ser	Ala	Ala	Met	Lys	Lys	Gln	Arg	Met	Thr	Arg	Arg
	1595					1600					1605			
Ser	Leu	Pro	Gly	Glu	Gln	Glu	Gln	Glu	Val	Ala	Gly	Ser	Lys	Val
	1610					1615					1620			
Phe	Leu	Glu	Ile	Asp	Asn	Arg	Gln	Cys	Val	Gln	Asp	Ser	Asp	His
	1625					1630					1635			
Cys	Phe	Lys	Asn	Thr	Asp	Ala	Ala	Ala	Ala	Leu	Leu	Ala	Ser	His
	1640					1645					1650			
Ala	Ile	Gln	Gly	Thr	Leu	Ser	Tyr	Pro	Leu	Val	Ser	Val	Val	Ser
	1655					1660					1665			
Glu	Ser	Leu	Thr	Pro	Glu	Arg	Thr	Gln	Leu	Leu	Tyr	Leu	Leu	Ala
	1670					1675					1680			
Val	Ala	Val	Val	Ile	Ile	Leu	Phe	Ile	Ile	Leu	Leu	Gly	Val	Ile
	1685					1690					1695			
Met	Ala	Lys	Arg	Lys	Arg	Lys	His	Gly	Ser	Leu	Trp	Leu	Pro	Glu
	1700					1705					1710			
Gly	Phe	Thr	Leu	Arg	Arg	Asp	Ala	Ser	Asn	His	Lys	Arg	Arg	Glu
	1715					1720					1725			
Pro	Val	Gly	Gln	Asp	Ala	Val	Gly	Leu	Lys	Asn	Leu	Ser	Val	Gln
	1730					1735					1740			
Val	Ser	Glu	Ala	Asn	Leu	Ile	Gly	Thr	Gly	Thr	Ser	Glu	His	Trp
	1745					1750					1755			

Val	Asp 1760	Asp	Glu	Gly	Pro	Gln 1765	Pro	Lys	Lys	Val	Lys 1770	Ala	Glu	Asp
Glu	Ala 1775	Leu	Leu	Ser	Glu	Glu 1780	Asp	Asp	Pro	Ile	Asp 1785	Arg	Arg	Pro
Trp	Thr 1790	Gln	Gln	His	Leu	Glu 1795	Ala	Ala	Asp	Ile	Arg 1800	Arg	Thr	Pro
Ser	Leu 1805	Ala	Leu	Thr	Pro	Pro 1810	Gln	Ala	Glu	Gln	Glu 1815	Val	Asp	Val
Leu	Asp 1820	Val	Asn	Val	Arg	Gly 1825	Pro	Asp	Gly	Cys	Thr 1830	Pro	Leu	Met
Leu	Ala 1835	Ser	Leu	Arg	Gly	Gly 1840	Ser	Ser	Asp	Leu	Ser 1845	Asp	Glu	Asp
Glu	Asp 1850	Ala	Glu	Asp	Ser	Ser 1855	Ala	Asn	Ile	Ile	Thr 1860	Asp	Leu	Val
Tyr	Gln 1865	Gly	Ala	Ser	Leu	Gln 1870	Ala	Gln	Thr	Asp	Arg 1875	Thr	Gly	Glu
Met	Ala 1880	Leu	His	Leu	Ala	Ala 1885	Arg	Tyr	Ser	Arg	Ala 1890	Asp	Ala	Ala
Lys	Arg 1895	Leu	Leu	Asp	Ala	Gly 1900	Ala	Asp	Ala	Asn	Ala 1905	Gln	Asp	Asn
Met	Gly 1910	Arg	Cys	Pro	Leu	His 1915	Ala	Ala	Val	Ala	Ala 1920	Asp	Ala	Gln
Gly	Val 1925	Phe	Gln	Ile	Leu	Ile 1930	Arg	Asn	Arg	Val	Thr 1935	Asp	Leu	Asp
Ala	Arg 1940	Met	Asn	Asp	Gly	Thr 1945	Thr	Pro	Leu	Ile	Leu 1950	Ala	Ala	Arg
Leu	Ala 1955	Val	Glu	Gly	Met	Val 1960	Ala	Glu	Leu	Ile	Asn 1965	Cys	Gln	Ala
Asp	Val 1970	Asn	Ala	Val	Asp	Asp 1975	His	Gly	Lys	Ser	Ala 1980	Leu	His	Trp
Ala	Ala 1985	Ala	Val	Asn	Asn	Val 1990	Glu	Ala	Thr	Leu	Leu 1995	Leu	Leu	Lys
Asn	Gly 2000	Ala	Asn	Arg	Asp	Met 2005	Gln	Asp	Asn	Lys	Glu 2010	Glu	Thr	Pro
Leu	Phe 2015	Leu	Ala	Ala	Arg	Glu 2020	Gly	Ser	Tyr	Glu	Ala 2025	Ala	Lys	Ile
Leu	Leu 2030	Asp	His	Phe	Ala	Asn 2035	Arg	Asp	Ile	Thr	Asp 2040	His	Met	Asp
Arg	Leu 2045	Pro	Arg	Asp	Val	Ala 2050	Arg	Asp	Arg	Met	His 2055	His	Asp	Ile
Val	Arg 2060	Leu	Leu	Asp	Glu	Tyr 2065	Asn	Val	Thr	Pro	Ser 2070	Pro	Pro	Gly
Thr	Val	Leu	Thr	Ser	Ala	Leu	Ser	Pro	Val	Ile	Cys	Gly	Pro	Asn

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2090						2095					2100			
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2105						2110					2115			
Leu	Ala	Lys	Glu	Ala	Lys	Asp	Ala	Lys	Gly	Ser	Arg	Arg	Lys	Lys
2120						2125					2130			
Ser	Leu	Ser	Glu	Lys	Val	Gln	Leu	Ser	Glu	Ser	Ser	Val	Thr	Leu
2135						2140					2145			
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Thr	Thr	Ser	Ser	Pro	Met	Ile	Thr	Ser	Pro	Gly	Ile	Leu	Gln	Ala
2165						2170					2175			
Ser	Pro	Asn	Pro	Met	Leu	Ala	Thr	Ala	Ala	Pro	Pro	Ala	Pro	Val
2180						2185					2190			
His	Ala	Gln	His	Ala	Leu	Ser	Phe	Ser	Asn	Leu	His	Glu	Met	Gln
2195						2200					2205			
Pro	Leu	Ala	His	Gly	Ala	Ser	Thr	Val	Leu	Pro	Ser	Val	Ser	Gln
2210						2215					2220			
Leu	Leu	Ser	His	His	His	Ile	Val	Ser	Pro	Gly	Ser	Gly	Ser	Ala
2225						2230					2235			
Gly	Ser	Leu	Ser	Arg	Leu	His	Pro	Val	Pro	Val	Pro	Ala	Asp	Trp
2240						2245					2250			
Met	Asn	Arg	Met	Glu	Val	Asn	Glu	Thr	Gln	Tyr	Asn	Glu	Met	Phe
2255						2260					2265			
Gly	Met	Val	Leu	Ala	Pro	Ala	Glu	Gly	Thr	His	Pro	Gly	Ile	Ala
2270						2275					2280			
Pro	Gln	Ser	Arg	Pro	Pro	Glu	Gly	Lys	His	Ile	Thr	Thr	Pro	Arg
2285						2290					2295			
Glu	Pro	Leu	Pro	Pro	Ile	Val	Thr	Phe	Gln	Leu	Ile	Pro	Lys	Gly
2300						2305					2310			
Ser	Ile	Ala	Gln	Pro	Ala	Gly	Ala	Pro	Gln	Pro	Gln	Ser	Thr	Cys
2315						2320					2325			
Pro	Pro	Ala	Val	Ala	Gly	Pro	Leu	Pro	Thr	Met	Tyr	Gln	Ile	Pro
2330						2335					2340			
Glu	Met	Ala	Arg	Leu	Pro	Ser	Val	Ala	Phe	Pro	Thr	Ala	Met	Met
2345						2350					2355			
Pro	Gln	Gln	Asp	Gly	Gln	Val	Ala	Gln	Thr	Ile	Leu	Pro	Ala	Tyr
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His	Pro	Phe	Pro	Ala	Ser	Val	Gly	Lys	Tyr	Pro	Thr	Pro	Pro	Ser
2375						2380					2385			
Gln	His	Ser	Tyr	Ala	Ser	Ser	Asn	Ala	Ala	Glu	Arg	Thr	Pro	Ser
2390						2395					2400			

His	Ser	Gly	His	Leu	Gln	Gly	Glu	His	Pro	Tyr	Leu	Thr	Pro	Ser
	2405					2410					2415			
Pro	Glu	Ser	Pro	Asp	Gln	Trp	Ser	Ser	Ser	Ser	Pro	His	Ser	Ala
	2420					2425					2430			
Ser	Asp	Trp	Ser	Asp	Val	Thr	Thr	Ser	Pro	Thr	Pro	Gly	Gly	Ala
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Gly	Gly	Gly	Gln	Arg	Gly	Pro	Gly	Thr	His	Met	Ser	Glu	Pro	Pro
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His	Asn	Asn	Met	Gln	Val	Tyr	Ala							
	2465					2470								